

## A NEW SPECIES OF WESTERN *CULICOIDES* OF THE *STONEI* GROUP (DIPTERA: CERATOPOGONIDAE)<sup>1</sup>

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ABSTRACT: A new species of *Culicoides* in the *Stonei* group, *Culicoides owyheensis* n.sp., is described from Idaho, USA.

DESCRIPTORS: Diptera, Ceratopogonidae, *Culicoides owyheensis*, sheep, bluetongue.

A severe outbreak of bluetongue disease occurred in a flock of sheep in Idaho in 1973 (Jones et al, in manuscript). The primary vector of bluetongue virus appeared to be *Culicoides variipennis* (Coquillett). However, another species of *Culicoides* was common in light trap collections and was also collected biting inside the ears of sheep prostrate with bluetongue disease. This paper provides a name for this second species attacking sheep.

The second species is described here as a new species in the *Stonei* group of *Culicoides* as reviewed by Wirth and Blanton (1971). A revised key is given for the four species now included in the *Stonei* group.

### *Stonei* group

The characters for this group are as given by Wirth and Blanton (1971) except for the following characters for females: eyes widely separated, with transverse transocular suture Y-shaped; third palpal segment swollen, with very shallow sensory pit with irregular opening; mesonotal disc usually concolorous, at most with three indistinct, longitudinal, darker lines; and spermathecae subequal, ovoid, usually with a distinct neck that is broadened basally.

The characters and measurements of five populations (1 paratypic *mortivallis* California, 1 paratypic *weneri* Arizona, 1 *owyheensis* n.sp., and 2 *stonei* Texas) clearly showed that *C. owyheensis* was closest to *C. mortivallis* when antennal sensoriae were used as the primary character for species separation (Wirth and Blanton, 1971). These data further showed that the

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Idaho population (*C. owyheensis* n.sp.) must be named as a new species but that a complete revision of the *Stonei* group should be undertaken. *Culicoides owyheensis* n.sp. was the largest fly studied, the length of antennal segment 11 was intermediate and yet the ratio of 1.6 was the largest value obtained for antennal segments (9 + 10)/11, and the third palpal segment was relatively short (2.0 largest ratio for lengths: third palpal segment /11).

Except for size, no characters were found that would distinguish the males of these species.

The authors are aware that the *Culicoides Stonei* group consists of species that are difficult to distinguish. They are committed to the further collection of material and to an extensive revision of the *Stonei* group.

### Key to females of the *Stonei* group of *Culicoides*

1. Antennal sensoriae present on segments 3-14 . . . . . *stonei* James  
 Antennal sensoriae present on segments 3, 7-14; 3, 9-14; or 3, 10-14 . . . . . 2
2. Antennal sensoriae present on segments 3, 9-14 or 3, 10-14  
 . . . . . *weneri* Wirth & Blanton  
 Antennal sensoriae present on segments 3, 7-14 . . . . . 3
- 3.<sup>a</sup> Ratio 1.4 for antennal segments (9 + 10)/11; 1.8 for third palpal segment /11; 3.7 for proboscis /11; and mean wing length 0.9 mm . . . . *mortivallis* Wirth & Blanton  
 Ratio 1.6 for antennal segments (9 + 10)/11; 2.0 for third palpal segment /11; 4.2 for proboscis /11; and mean wing length 1.1 mm . . . . . *owyheensis* n.sp.

### *Culicoides owyheensis* n.sp.

Female: Wing length 1.1 mm (1.0-1.2; n=27). Antennal sensoriae on segments 3, 7-14 (69%, with 0% on 3-14; n=39), not multiple. Ratio of lengths of structures divided by antennal segment 11: antennal segments 9 + 10, 12, 13, 14, and 15 are 1.6, 1.0, 1.1, 1.4, and 1.7 (1.4-1.7, 1.0-1.1, 1.0-1.3, 1.2-1.5, and 1.4-1.9; n=24, 22, 22, 22, and 22); third palpal segment 2.0 (1.7-2.2; n=17); and proboscis 4.2 (3.7-4.6; n=24). Antennal ratio [AR (11-15)/(3-10)] 1.0 (1.0-1.1; n=21). Third palpal segment swollen with very shallow pit having irregular opening; palpal ratio (PR) of third segment length/width 2.2 (1.8-2.4; n=13). Ratio of head length to proboscis (H/P) 1.2 (1.1-1.3; n=27); this ratio for P/H of most authors 0.8 (0.77-0.93; n=27). Mandible with 11-13 teeth.

Brown species (pinned material; ♀♀ n=24) that is variously yellowed: from mesonotal disc and scutellum concolorous brown with three indistinct darker longitudinal lines on disc to usually mesonotal disc brown with humeral corners, anterior margin of mesonotum, and scutellum yellow; caudal margin of dorsal aspect of abdominal segments variously yellowed; and halteres bright yellow, posteriorly whitened.

<sup>a</sup>These ratios and measurements were taken from a comparison that included representative populations of all four species. For the populations measured the values were the smallest or close to the smallest for *mortivallis* and the largest for *owyheensis*.

**Type Locality:** USA, Idaho, Owyhee Co., near Bruneau, collectors ARS (USDA: R.H. Jones and H.W. Potter, Jr.). Types are deposited in U.S. National Museum. Holotype female (USNM Type No. 75302, slide), 26-27 VIII 1973, light trap. Allotype male, slide, same. Paratypes: Slides 26 ♀♀ and 2 ♂♂, 26-27 VIII 1973, light trap. Pinned 6 ♀♀, 23-24 VIII 1973, light trap; 12 ♀♀ and 3 ♂♂, 26-27 VIII 1973, light trap; and 6 ♀♀, 27 VIII 1973, from inside ear prostrate sheep. Alcohol 47 ♀♀ and 9 ♂♂, 26-27 VIII 1973, light trap.

#### LITERATURE CITED

Wirth, W.W. and F.S. Blanton. 1971. New western *Culicoides* of the *stonei* group. J. Kansas Entomol. Soc. 44: 459-467.

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#### IMPORTANT NOTICE

Attention is called to an important change in the page charges policy of the American Entomological Society. With great reluctance, this new policy was adopted at a meeting of the executive Council of the Society on January 19, 1978 and is dictated by financial necessity. It applies to both TRANSACTIONS and ENTOMOLOGICAL NEWS and will become effective with all papers received for publication after April 1, 1978. This new policy follows:

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At first glance this may not seem different from the present policy but the key new words are ‘unemployed’ and ‘members’.